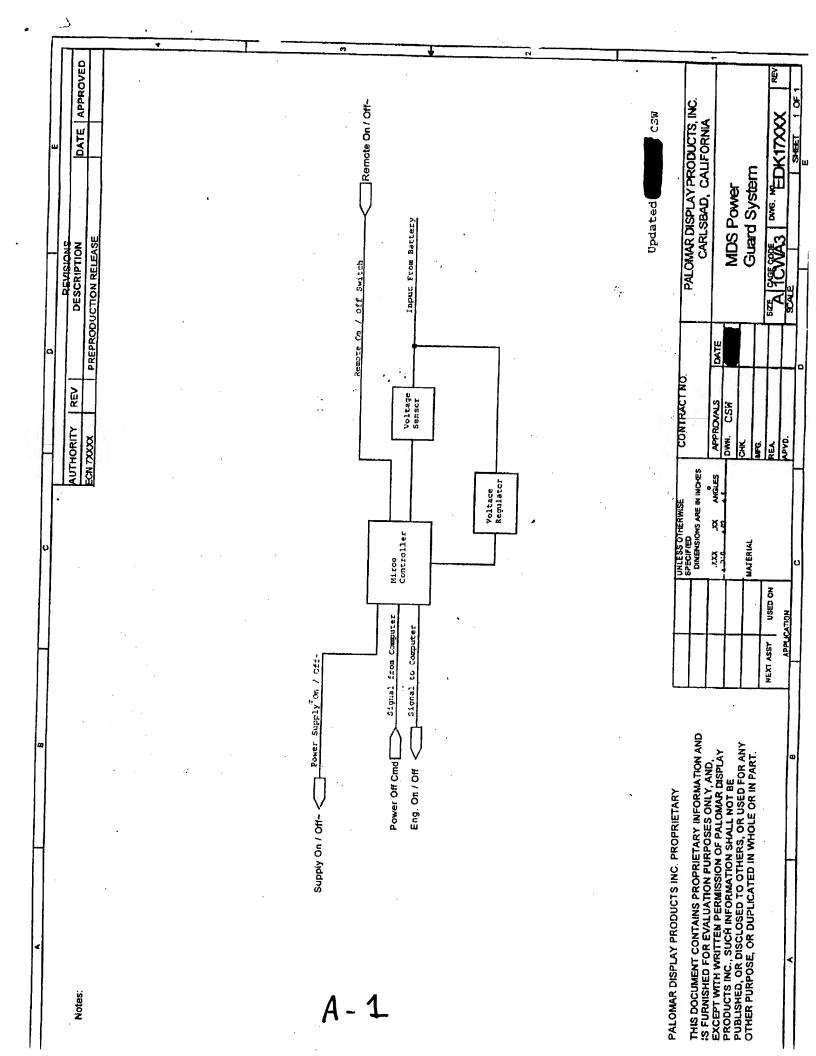
EXHIBIT A



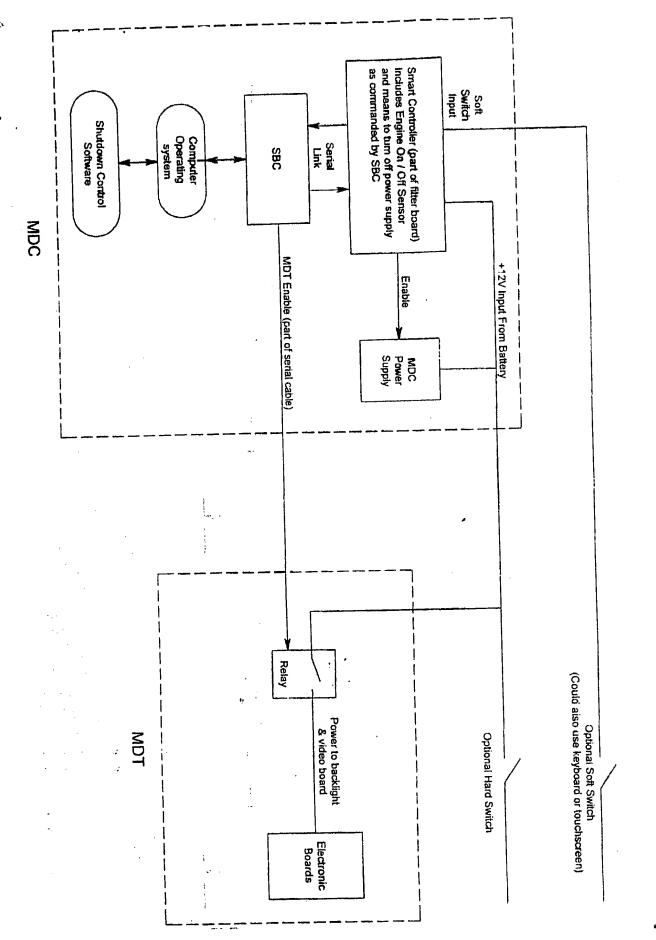


EXHIBIT B

(d) - -1

Frontline Technology Corporation

Chris Weinold
Palomar Display Products, Inc.
1945 Kellogg Avenue
Carlsbad, CA 92008

Dear Chris,

From our conversation last week on the Mobile Data System Power Guard, I would like to present the following quote for implementation of the software for the two tasks discussed.

The first task is to turn off the MDT back light after a pre-selected timeout. This will be accomplished by controlling the DTR signal on the COM port used to interface to the touch screen. This assumes that the vendor of the touch screen can provide a software call, or handle a Windows message, allowing the state of this signal to be set. After reviewing the implementation choices, I would recommend this be implemented using the screen saver interface provided by Win98. A custom screen saver module would be developed that, when active, would 1) blank the screen, and 2) set the DTR on the touch screen COM Port via a call or message to the screen vendor's software. The timeout period would be programmable using the existing screen saver interface. Upon any mouse or keyboard action, the software would command the DTR signal to be reset, and the screen saver terminated. The estimate for development of this module is 24 hours.

The second task is to automatically shut down the MDC after 1) a preselected time if the engine is off and the user does not cancel the action, 2) via a soft shutdown switch, or 3) via a software command from another application. The interface for engine and switch status would be via a dedicated RS-232 COM Port connected to a proposed Smart Controller board. It would be communicated via a serial message from the smart controller. The status would include system voltage and the state of the soft switch. The system voltage would be compared against a user specified value to determine if the engine was on or off. I would recommend that this be implemented as a separate process, initiated automatically each time the system is booted. This process would monitor the COM port for engine status provided by the smart controller, and after the engine is off and the timeout period expired, initiate user notification of the pending shutdown. If the user did not cancel the shutdown in 30 seconds, it would issue a command the smart controller to shutdown the MDC, and command Windows to shutdown. A configuration dialog would also be implemented, allowing the user to enable or disable the MDC power down feature, specify the timeout for automatic shutdown from engine off, and the voltage threshold for engine off. This dialog would also display the current voltage reported by the controller so the user could determine the installation specific engine on and off voltages. The estimate for development of this module is 56 hours.

The deliverables for both tasks include the source code, executables, and a batch file for installation from a floppy drive. Documentation, other than that present in the source code, is not included in this estimate. We will gladly provide an estimate upon receipt of your specific documentation requirements.

Since the Palomar group of companies has been a good customer of Frontline Technology, I am waiving the 160 hour minimum, and quoting based on our current long term rate. On a time and materials basis, the estimated total cost would be \$7200 (80 hrs @ 90.00/hr). This is an estimate only, the actual time could be greater or less. On a firm fixed price basis, Task 1 would be \$2592. Before committing to a firm fixed price on Task 2, we would like to have the Smart Controller interface fully defined. Our current schedule is such that work on these tasks could begin upon receipt of a purchase order. If you have any questions, please feel free to give me a call. I appreciate the opportunity to provide Palomar Displays this quote, and hope that we have the opportunity to work with you on this project.

Regards,

Kurt Mihalco

Cc: Gary Timmerman, Engineering Manager 199

Post Office Box 2526, Carlsbad, California, 92018-2526

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EXHIBIT C

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TO A SA

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Palornar Display Products Inc., 1945 Kellog Ave., Carlsbad, CA 92008, 760 931-3000, Fax 760 931-5198



Fax Cover

Palomar Display Products Inc.

Date:

٠.,

6/29/00

Attn:

Rod Brown

Co:

Patent Atly.

Fax:

858 581-1282

CC:

From:

Chris Weinold

Phone: Fax:

760 931-3040 760 931-5198

Email

cweinold@palomardisplays.com

Subject:

Trademark

Number of pages including cover: 4

Message:

Hi Rod,

Attached is what I found on the PTO web site for the mark and a copy of the "Invention Disclosure" I did some time ago for this product. Here's some further information for the trademark that we'd like to claim.

1.

PowerGuard

Market: Police & emergency vehicle mobile data systems

Electronic hardware and software integrated with an on-board in vehicle mobile data system.

Helps conserve vehicle battery charge and automates shutting down the Mobile Data System. Automatically shuts down the Mobile Data System when the engine is off for a specified period and there's been no user input. Also controls the mobile data terminal back lights to conserve power, and monitors the vehicles battery voltage to insure it is not overly discharged, if so it will initiate the automatic shut down sequence.

) H

Palomar Display Products Inc. - Invention Disclosure

Title of Invention : Automated Controller for Shut Down Of Mobile Data System
Name of Inventor(s); Complete information for each inventor.
Full Name (first, MI, last) Christoffer, S. Weinold
Citizenship USA
Street Address of Residence 812 Caminito Azul, Carlsbad, CA 92009
Mailing Address (if different)
Dates of Conception :
Date first thought of invention
Date first written descriptionemail to: Dinah Thomas, Asseon Computers
Date first drawing
Date of first disclosure
Disclosed to whom? Chris Lewness

Summarize Novelty of Invention:

An integrated system for automating the controlled shutdown of a Mobile Data System. Previous systems relied upon real time user actions to initiate the shutdown of a Mobile Data System. This invention provides the means for the user to program the system to shutdown in a controlled manner based upon the occurrence of some external event and/or a pre-programmed timer. Once programmed this system requires no further action by the user to insure that the Mobile Data System will shutdown in a controlled manner whenever certain external events occur or other conditions are met that warrant shutting down the Mobile Data System.

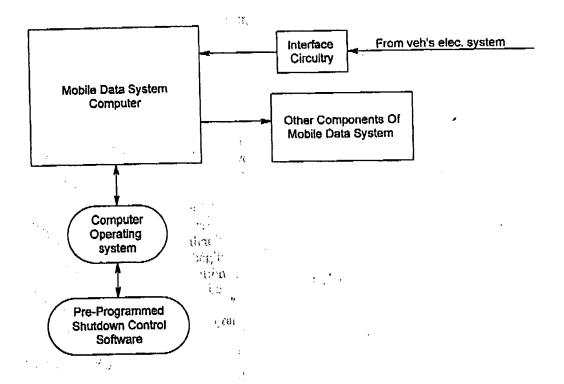
This invention differs from a battery backup or un-interruptible power supply because it anticipates power shutdown and acts to initiate a controlled shutdown of the Mobile Data System before this occurs.

A Mobile Data System with this invention offers many advantages over current systems. Mobile Data Systems frequently experience sudden power loss and can suffer operating system crashes when this occurs. Sudden power loss can be due to the action of an external device such as a "ChargeGuard" that is often used with these installations, or due to power drain of the vehicles battery.

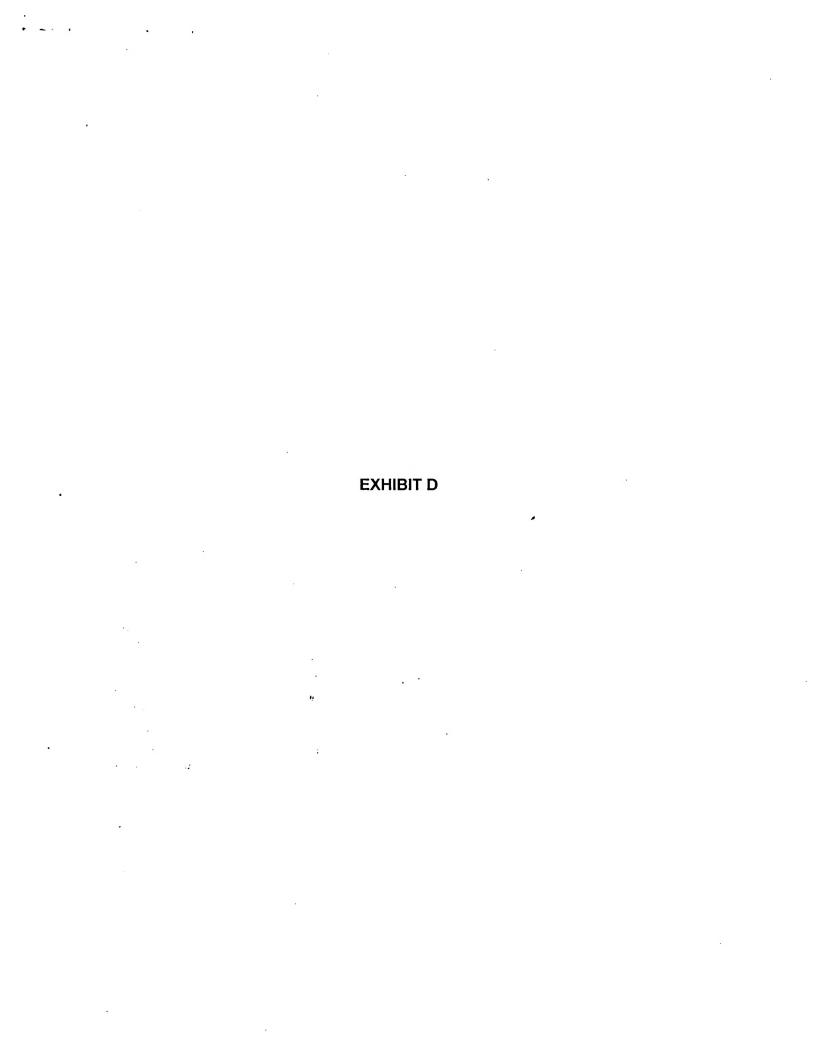
Further Description

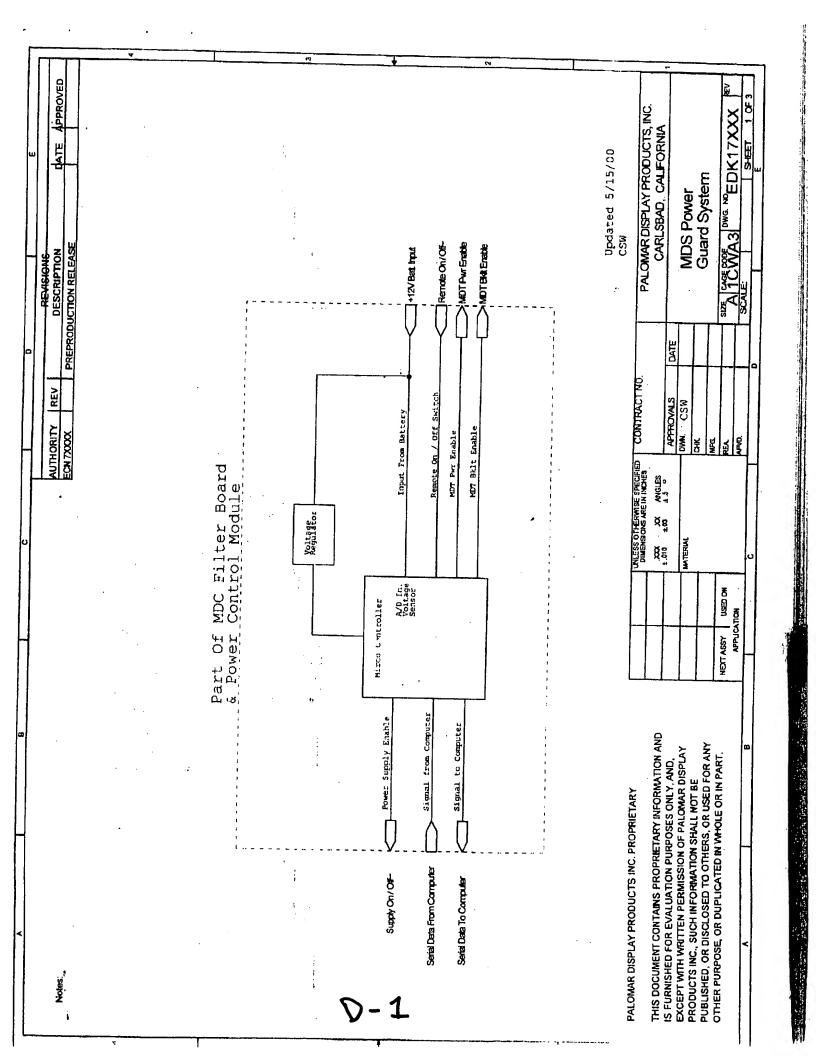
The Automated Controller for Shutdown of Mobile Data Systems uses an interface device such as an RS-232 receiver connected to the vehicles switched power electrical system. A software program running on the Mobile Data System Computer monitors this signal. This software program includes an graphical user interface that prompts the user to select certain options when the user initially sets up the program. Once setup by the user the program will operate autonomously as a background task. The software program will monitor the input signal from the vehicle. If the software detects that the signal has been in-active for a pre-programmed period of time the software program will begin a controlled shutdown of the Mobile Data System. It does this by commanding each application to close, after which it commands the operating system to shut down and await for power to be turned off.

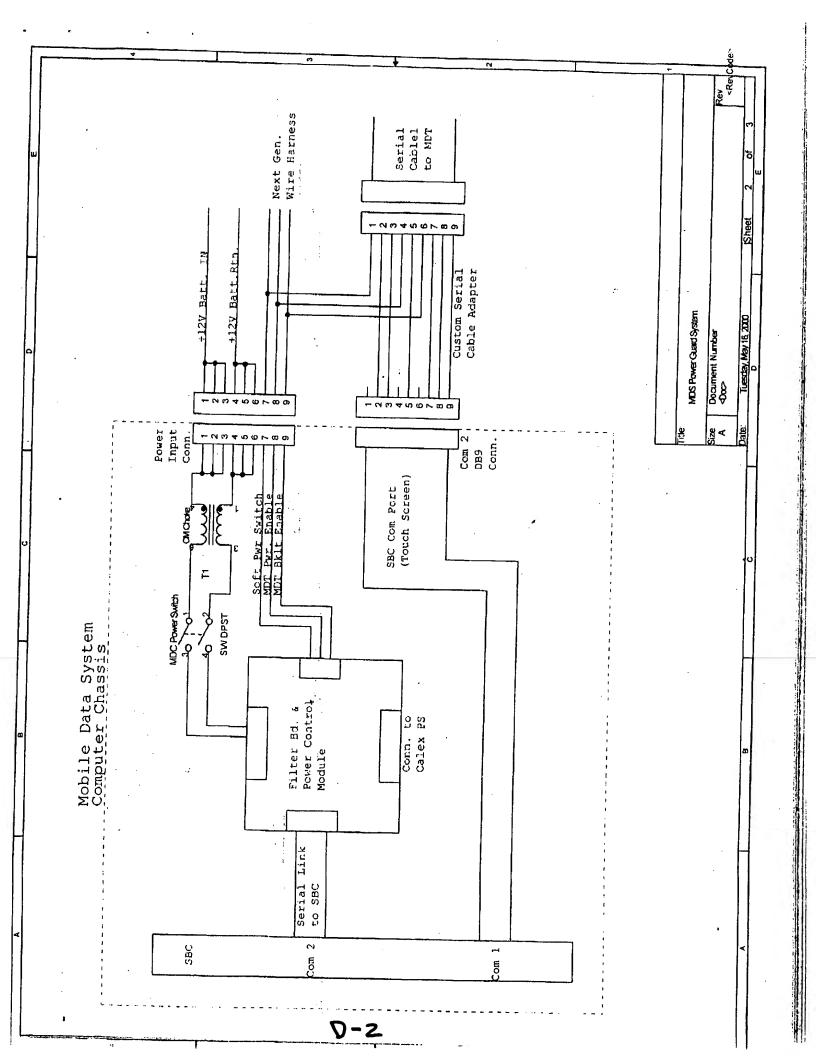
The following sketch is a block diagram of major system components.

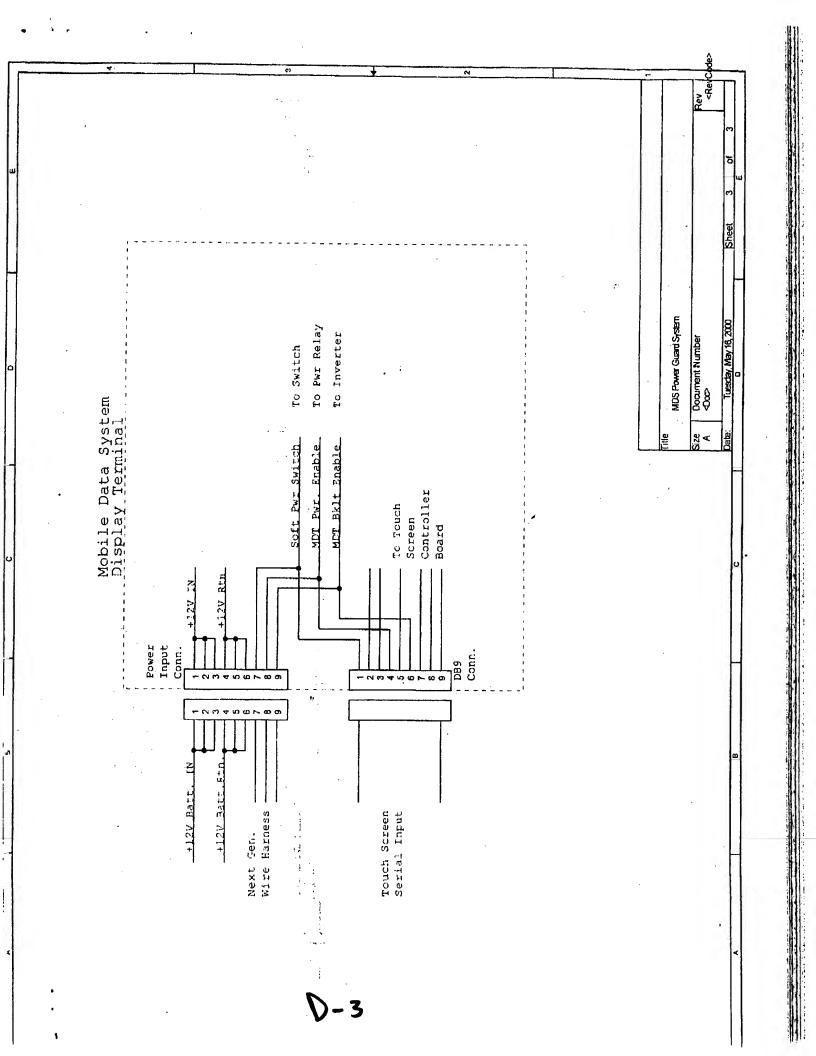


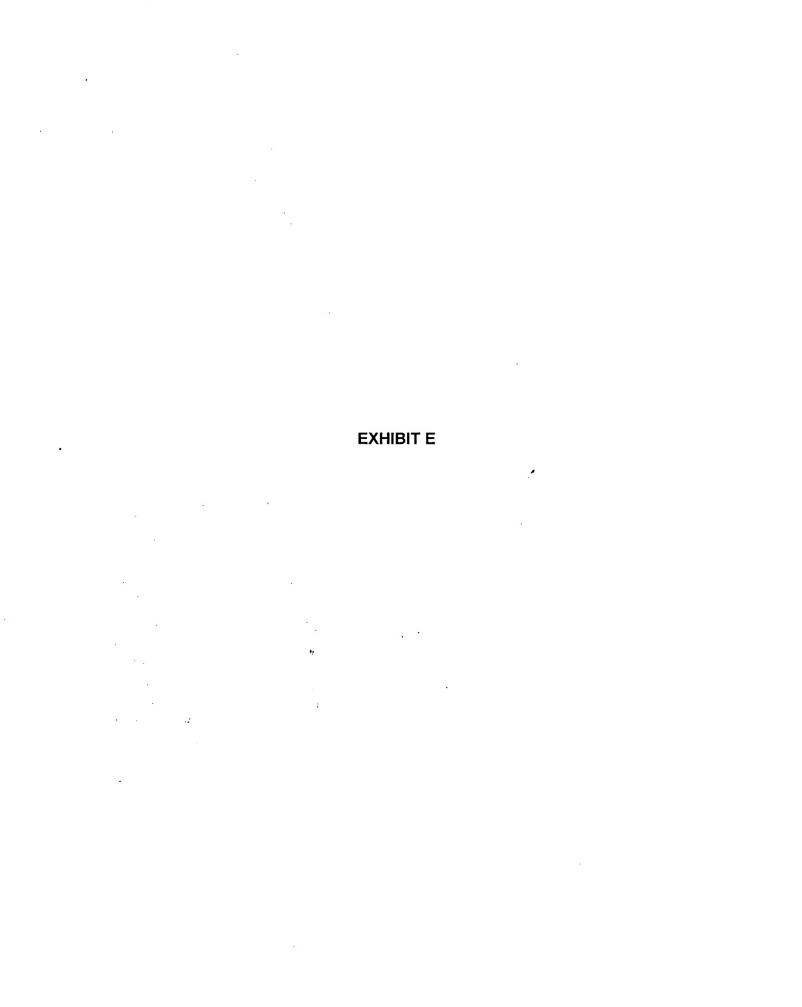
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From:

Chris Weinold

Sent:

Tuesday, June 20, 2000 2:33 PM

To:

Bruce Barnes; Kirk D Finney; Jeffrey A Kovell; Chris Lewnes; Wayne Thompson

Cc:

Gary L Timmerman

Subject:

Meeting Notice: MDT Upgrade / Power Guard System

There will a meeting tomorrow afternoon, 6/21/00, at 2:00 PM in the upstairs conference room to discuss pending hardware changes to COPS MDT in support of the "Power Guard" power management system.

We need to decide whether to try and implement these changes for our next production run and whether we should include any other changes such as push button brightness control.

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From:

Chris Weinold

Sent:

Thursday, July 06, 2000 3:45 PM

To:

rracine@ontariopolice.org; cfernand@ci.ontario.ca.us; kc@knightcommunications.com;

kcm@ontariopolice.org

Subject:

PowerGuard™ Power Management Specification



PG_Spec1f.doc

Attached is the preliminary specification for the Palomar Display Products PowerGuard power management system.

Specification for Palomar Display Products 'PowerGuard^{TM'} Power Management System for Mobile Data Systems (Preliminary)

This specification describes the Palomar Display Products 'PowerGuard^{TM'} power management system for Mobile Data Systems.

1.}

Overview	
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2. Power Management Control Module	3
3. Control Signals and Circuitry in the Mobile Data Terminal	3
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1. Battery Back Up	3
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1. PowerGuard™ Cabling, New Installations	
2. PowerGuard™ Cabling, Retro-fits	4

Palomar Display Products, Inc. Proprietary This document contains PROPRIETARY INFORMATION and is furnished for evaluation purposes only, and except with written permission from Palomar Display Products, Inc. such information shall not be published, or disclosed to others, or used for any other purpose, or duplicated in whole or in part.

Overview

The PowerGuard™ system is designed to help conserve vehicle battery charge and to simplify and automate shutting down the Mobile Data System. Without these controls a Mobile Data System could inadvertently drain a vehicles battery, be susceptible to sudden power disconnects, and typically requires a regimented shut down procedure. If the Mobile Data System is not shut down properly the computer operating system or application program might crash and could cause hard drive errors and undesirable operation upon rebooting.

The PowerGuard™ system is user programmable to automatically shut down the Mobile Data System when the engine is off for a specified period and there's been no recent user input. The system also features automatic control of the terminal back lights to conserve power, and monitors the vehicles battery voltage to insure it is not overly discharged, if so it will initiate the automatic shut down sequence.

The PowerGuard™ system encompasses three major sub-systems. These are:

- a) User interface and application program running on the Mobile Data Computer under the Windows operating system
- b) Power management control module built into the Mobile Data Computer and communicating with the application program via a dedicated communications port
- c) Control signals to and circuitry in the Mobile Data Terminal to control the terminal back lights and power

Detailed Description

1. <u>User Interface and Operation of the Application Program</u>

The user interface features a configuration dialog that allows the user to program the following functions:

- a) Enable or disable the power down feature
- b) Timeout from when the engine is turned off to start the automatic shutdown of the Mobile Data System
- c) Timeout when the engine is off to turn off the terminal back lights when there's been no recent user input

The automatic shut down function will close all application programs and power off the Mobile Data System under any of the following conditions.

- a) After a pre-selected time if the engine is off and the user does not cancel the action. (Note: If the user cancels the action the program will try again after a period of 15 minutes)
- b) Recognition of a soft shutdown switch. (Allows for single key or one button shut down)
- c) Software command from another application
- d) Excessive battery discharge (voltage drops below acceptable level for an extended period)

The PowerGuard™ will automatically power up and restarts the Mobile Data System again as soon as the vehicle's engine is started or the user turns the master power switch off then on.

The PowerGuard™ also features the means to program automatic control of the terminal back lights to conserve power when the engine is off and there's no user input. The back lights will come on again immediately when the user operates the touch screen, pointing device, or keyboard.

The PowerGuard™ application program communicates with the Power Management Control Module (built into the Mobile Data Computer) for engine on/off status and to control the terminal back lights and system power. Communications between the PowerGuardTM program and Power Management Control Module is via a dedicated RS-232 Com Port.

Custom features can be added to the application program to provide other functions and communicate with other programs if the necessary technical information is provided.

2. Power Management Control Module

The Power Management Control Module is a small printed circuit board installed internally in the Mobile Data Computer. It features an embedded micro-controller and other electronic circuits. The Power Management Control Module communicates with the PowerGuardTM application program via a dedicated RS-232 com port. This module provides engine on/off status and battery charge while operating on commands to control the terminal back lights and shut down the Mobile Data System as programmed.

The Power Management Control Module receives power from the vehicle's battery via the power connector at the Mobile Data Computer. The control circuitry draws less than 50mA and is always powered except when the master switch is off.

3. Control Signals and Circuitry in the Mobile Data Terminal

min.

The power management features of the Mobile Data Terminal include an interface for control signals from Power Management Control Module, circuitry to turn the back lights on and off, and a power relay to control terminal power.

The back light and power control signals are available to the internal circuits through both the power and the touch screen serial interface connectors. If these signals are not connected the terminal will still operate normally, however, it will not be able to use the automatic functions associated with the PowerGuard™ system.

Other Technical Notes

1. Battery Back Up

The PowerGuard™ system could support a battery backup option. However this capability would only protect against the unlikely event where the vehicle's battery is inadvertently disconnected before shutting down the system or if there is some extreme problem in the vehicles electrical system.

2. Network Log Off

The PowerGuardTM system does not in itself provide the software functions to log off a communications network before shutting down the system. However, it can provide software hand shaking with application programs and set flags indicating an imminent system shut down. It is up to the network communication program to operate on this information and provide a graceful log off. Palomar Display Products is capable of supporting our customer's needs and can provide software hooks and other features as required if specified and defined by the customer.

System Installation Notes

1. PowerGuardTM Cabling, New Installations

New installations will utilize a system power wiring harness featuring 3 additional conductors for control signals. These control signals are routed from the 9 pin power connector at the Mobile Data Computer to the power connector on the Mobile Data Terminal. (Note: older computers used a 4 pin power connector).

2. PowerGuard™ Cabling, Retro-fits

Retro-fitting older Palomar Display Product's Mobile Data Systems with the PowerGuardTM system does not require running new cables but will require the following:

- a) The Mobile Data Computer and Mobile Data Terminal will be reworked at our facilities
- b) The existing (4 pin) power connectors on the system (vehicle) power wiring harness will be replaced at both the Mobile Data Computer and Mobile Data Terminal with new (9 pin) power connectors
- c) A short custom cable adapter will be installed on the Mobile Data Computer to interface the new signals on the power connector to the touch screen serial communications cable.
- d) The new signals are provided to the Mobile Data Terminal via the touch screen serial cable. At the Mobile Data Terminal the signals are connected to internal circuits via the serial connector on the reworked Mobile Data Terminal.

From:

Chris Weinold

Sent:

Wednesday, July 05, 2000 9:14 AM

To:

Chris Lewnes; Kirk D Finney; John T Gutz; Robert A Luther; Mark Stolmeier, Gary L Timmerman; Wayne Thompson; Bruce Barnes; Donald O Hayes; Stephen B Hudek;

ohara consulting services@msn.com

Subject:

MDT with PowerGuard™ Final Design Review

I'll be meeting with Joy Smith this Thurs., July 6 to start the PCB layout of the modified MDT boards featuring the PowerGuard system

If any one is interested I'll be happy to hold a design review so you can see what I'm doing. $\frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left(\frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left($

FO-ATTEC

Ή.

Please let me know and we'll set up a time and place.

Chris Weinold Ext. 3040

From:

Chris Weinold

Sent:

Wednesday, July 12, 2000 3:14 PM

To:

kc@knightcommunications.com; cfernand@ci.ontario.ca.us

Cc:

rracine@ontariopolice.org; Kirk D Finney

Subject:

PowerGuard™ Shutdown Software

Hi Guys,

I'm forwarding some information from our application software developer. I'll try to set up a conference call for next week so we can talk about this. I'm sure we'll make some adjustments, the following is provided for discussion. I've also attached the executable example that he provided. Please forward to Harry or anyone else you feel should be involved. Also be sure to save files and close any applications before trying. Thanks a lot

In the case of a pending shutdown, the user would be notified, and if not canceled within 30 seconds, the process would command Windows to shutdown. Windows then sends all applications a WM_QUERYENDSESSION message. If all applications approve the shutdown, they are subsequently sent a WM_ENDSESSION message, causing them to exit, otherwise the shutdown is aborted.

Attached is an executable that operates in a similar manner as described above. It prompts you to shut down Windows and you can observe the behavior if other applications are open with modified data. Try it with Word or Excel (with unsaved data), and you will see the behavior.

From:

Chris Weinold

Sent:

Monday, August 21, 2000 10:42 AM

To:

mihalco@cts.com; rracine@ontariopolice.org; kc@knightcommunications.com;

kcm@ontariopolice.org; cfernand@ci.ontario.ca.us; Kirk D Finney; Bruce Barnes

Cc:

Chris Lewnes; Gary L Timmerman; Jeffrey A Kovell

Subject:

Conference Call with Ontario PD, Aug. 23 10:30A

There will be a conference call this Wed. Aug. 23, at 10:30 AM with KC Mulii, and Colin Fernandez of the Ontario Police Department. The purpose of the conference call will be to review the PowerGuard $^{\text{\tiny{TM}}}$ specification and operation. Participating with Palomar will be our software developer Kurt Mihalco.

If any one does not have a copy of our current PowerGuard ${}^{\text{\tiny{TM}}}$ specification please let me know and I will email it to them. This document has yet not been revised to incorporate the change to Windows NT operating system and there may be other changes needed as well. If anyone is aware of any specific issue they'd like to review or discuss please reply to this email with a brief description so that we can prepare a response.

I will be calling KC on his phone at: 909 391-6542

Thanks a lot,

Chris Weinold Palomar Display Products 760 931-3040

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PALOMAR DISPLAY PRODUCTS, INC.

1945 Kellogg Avenue, Carlsbad, California 92008 Telephone: (760) 931-3226 FAX (760) 931-3298

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Source Code: M Class Code: 710

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